



IN THE UNITED STATES PATENT & TRADEMARK OFFICE

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In re continued application of)
)
 PEGGY M. TOMASULA) Before the Board of Patent
) Appeals and Interferences
 Production of High Protein)
 Concentrates) Group Art Unit 1761
) Examiner Arthur L. Corbin
 Serial No. 09/247,219)
)
 Filed February 10, 1999)

RECEIVED

The Honorable
 The Assistant Commissioner of Patents
 Sir:

JUL 25 2002
TC 1700

SUPPLEMENTAL APPEAL BRIEF

This Supplemental Appeal Brief is in support of Applicant's request for reinstatement of the Appeal from the Final Rejection of Claims 2, 4-6, 9, 11-13, and 15-19 pursuant to the REOPENED prosecution of the case and a new ground of rejection applied by the Examiner.

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as First Class Mail in an envelope addressed to: Assistant Commissioner of Patents, Washington, D.C. 20231 on

July 16, 2002
 (Date of Deposit)

Curtis P. Ribando
 Name of Depositor

Curtis P. Ribando
 Signature
 July 16, 2002

Date of Signature

Serial No. 09/247,219 - Peggy M. Tomasula

Fee Waiver

Pursuant to MPEP 1208.02, Applicant requests applying the fee previously paid for the submission of an Appeal Brief. If any additional fees are required, the Commissioner is hereby authorized to charge such fees to Deposit Account 50-2132.

Real Party of Interest

Same as in Appeal Brief.

Related Appeals and Interferences

Same as in Appeal Brief.

Status of Claims

Same as in Appeal Brief.

Status of Amendments

The amendment filed in Paper 22 on June 4, 2002, pursuant to the reopened prosecution of the case has not been entered. Insofar as the reopened prosecution introduced a new ground of rejection, the Action of March 19, 2002, was improperly made FINAL. Insofar as that amendment responding to that Action was

Serial No. 09/247,219 - Peggy M. Tomasula

necessitated by the new ground of rejection and did not constitute new matter, it was improperly withheld from entry by the Examiner. Notwithstanding the above, Applicant will proceed to Appeal with the Claims submitted in the attached Appendix of Claims in order to expedite prosecution.

Summary of Invention

Same as in Appeal Brief.

Issue

Claims 2, 4-6, 9, 11-13 and 15-19 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Tomasula (U.S. Patent No. 5,432,265) in view of Dahlstrom et al. (U.S. Patent No. 5,006,349).

Grouping of Claims

Same as in Appeal Brief.

Argument

The Rejection of Claims 2, 4-6, 9, 11-13 and 15-19 over Tomasula under 35 U.S.C. 103(a) in view of Dahlstrom et al.

The primary reference, Tomasula, teaches the precipitation and removal of milk protein (predominantly casein) from aqueous media using high pressure carbon dioxide. Reference to vegetable material (col. 4, lines 50-55) is only in the context of sterilization of vegetable pieces. There is no mention of concentrating vegetable protein, which may be any one or more of several specific proteins, such as gluten, glutenin, zein, glycinin, and gliadin. These proteins each have specific solubility properties and isoelectric points. There is no suggestion in Tomasula that a solution/dispersion of a vegetable protein can be precipitated by pressurized carbon dioxide in order to yield a recoverable curd.

Dahlstrom teaches treating a protein-containing fluid stream, such as milk and soy milk (col. 3, lines 22-39), with a food grade acid stream such as carbonic acid (col. 3, lines 49-65). The protein and acid streams are forced together through a restricted orifice under high pressure to create extreme

turbulence and promote dispersing of the ingredients (col. 4, lines 13-20). The role of the acid is to reduce the pH of the protein below the isoelectric point, and thereby precipitate a curd.

The issue of whether or not it would be obvious to the person of ordinary skill in the art to substitute a vegetable protein source for the dairy protein source of Tomasula has been addressed in the specification (pages 9 and 10). As noted therein, Applicant recognizes that the apparatus described in the '265 patent can be used for the process of treating vegetable protein in accordance with the invention. However, the chemistry and operating conditions of the respective processes are different. The casein proteins treated by Tomasula are linked by calcium phosphate bonds that must be broken so that individual proteins are held in solution/dispersion. The temperature of the solution/dispersion is then adjusted, causing the proteins to agglomerate, thereby entrapping other solids and dissolved materials within the network of agglomerated proteins. Thus, the Tomasula process is specifically temperature-dependent.

In the present invention, there is no dissolving of calcium phosphate bonds to free the proteins. The vegetable proteins of the invention (gluten, glutenin, zein, glycchinin and gliadin)

precipitate isoelectrically, wherein the change in pH of the solution/dispersion causes decreased solubility of selected proteins. Those specific proteins (which fortuitously are the desirable proteins) precipitate from the solution/dispersion, leaving behind other dissolved materials.

The Examiner relies upon Tomasula to show a continuous CO₂ process applied to precipitation of compounds other than casein from solution, and particularly any substance that is known to precipitate in acidic media. The Examiner cites Dahlstrom for the teaching that either milk or soy protein can be coagulated with carbonic (or other) acids, and uses this as the link for his position that it would be obvious to treat soy protein by the process of Tomasula.

Applicant submits that this *prima facie* holding of obviousness must fail for several reasons. The only example of efficacy given by Tomasula is with milk proteins. Applicant does not refute the teachings in Tomasula regarding applicability of the CO₂ process to other proteins for the primary purpose of precipitating those proteins. However, there is nothing in Tomasula to suggest that when vegetable proteins (as opposed to dairy, animal, or microbial proteins) are precipitated, the original size of the precipitated solids can be maintained as required by step (c) of Claim 15. As indicated above, the

vegetable proteins are different from milk proteins, are much more varied than the singular casein protein precipitated by Tomasula, and would not be expected to behave in the same way when subjected to the carbon dioxide treatment of the reference.

Though Dahlstrom teaches precipitating protein from various sources with food grade acids, there is nothing in Dahlstrom to indicate that vegetable proteins can be precipitated with acid in a system other than that specifically described in the reference. Applicant has gone to great length to point out that the ultrasonic treatment of Dahlstrom operates completely differently from the system of Tomasula (see original Brief, pages 8-14). The resultant atomized protein precipitate of Dahlstrom is texturally and functionally different from the cottage cheese-like curd of Tomasula (see page 8, lines 24-26, of the specification).

Finally, until the vegetable proteins of Dahlstrom are actually subjected to the treatment process of Tomasula, there would be no way for the person in the art to predict whether the physical properties of the resultant vegetable protein product are a result of the source material being treated, a function of the treatment process, or both. As discussed in Applicant's original Brief, the ultrasonic device of Dahlstrom will inevitably disintegrate the precipitate, thereby yielding a

product having very small particle sizes (below 0.10 microns).

It is not known if other processes, such as that of Tomasula, would permit the recovery of a curd-like precipitate.

Summary

Appellant submits that the Claims on Appeal are directed to an invention which is both novel and unobvious under 35 U.S.C. §102 and 35 U.S.C. §103. Appellant recognizes that the invention is an extension of that taught by the Tomasula patent.

Nonetheless, Appellant has established in the above arguments that there would have been no motivation for a person of ordinary skill in the art of precipitating milk proteins to apply the teachings of Tomasula to vegetable proteins, such as soy.

The Examiner has seemingly disregarded the requirement that there must be some motivation for combining teachings of different references in order to hold that a claimed invention would be obvious over those references. It is apparent from the Final Rejection that the Examiner has ignored the dissimilarity in the respective processes of Tomasula and Dahlstrom et al. and has done no more than make a hindsight reconstruction of the invention.

Serial No. 09/247,219 - Peggy M. Tomasula

Accordingly, reversal of the subject rejection and favorable consideration of the claims on appeal are earnestly solicited.

Respectfully submitted,



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